CLAIMS

1. A magnetic head including a write head, comprising:

a first (P1) magnetic pole;

a second (P2) magnetic pole;

a write gap layer being disposed between said P1 magnetic pole and said P2 magnetic pole;

at least one of said P1 magnetic pole and said P2 magnetic pole being composed of a NiFe ion composition, and wherein the ratio of Ni to Fe is graduated throughout portions of either of said P1 magnetic pole and said P2 magnetic pole.

2. A magnetic head as described in claim 1 wherein said P1 magnetic pole is formed with a first portion wherein the relative concentration of Ni and Fe is approximately constant and a second portion wherein the relative concentration of Ni and Fe ions is graduated.

3. A magnetic head as described in claim 2 wherein said second portion of said P1 magnetic pole is disposed proximate said write gap layer.

4. A magnetic head as described in claim 3 wherein the Fe concentration in said second portion varies from approximately 20 wt.% to approximately 60 wt.%.

5. A magnetic head as described in claim 4 wherein a portion of said second portion having an Fe concentration of approximately 60 wt.% is disposed proximate said write gap layer.

6. A magnetic head as described in claim 1 wherein said P2 magnetic pole is formed with a first portion wherein the relative concentration of Ni and Fe is graduated, and a second portion wherein the relative concentration of Ni and Fe is approximately constant.

7. A magnetic head as described in claim 6 wherein said first portion of said P2 magnetic pole is disposed proximate said write gap layer.

8. A magnetic head as described in claim 7 wherein the Fe concentration in said first portion varies from approximately 60 wt.% to approximately 20 wt.%.

9. A magnetic head as described in claim 8 wherein a portion of said first portion having said approximately 60 wt.% Fe concentration is disposed proximate said write gap layer.

10. A magnetic head including a write head, comprising:

a first (P1) magnetic pole being composed of a NiFe composition, wherein the ratio of Ni to Fe is graduated throughout portions of said P1 magnetic pole;

a second (P2) magnetic pole being composed of a NiFe composition, and wherein the ratio of Ni to Fe is graduated throughout portions of said P2 magnetic pole;

a write gap layer being disposed between said P1 magnetic pole and said P2 magnetic pole.

11. A magnetic head as described in claim 10 wherein said portion of said P1 pole having said graduated composition is disposed proximate said write gap layer, and said portion of said P2 magnetic pole having said graduated composition is disposed proximate said write gap layer.

12. A magnetic head as described in claim 11, wherein the Fe concentration within said portion of said P1 magnetic pole having said graduated composition varies from approximately 20 wt.% to approximately 60 wt.%, and wherein the Fe concentration of said P1 magnetic pole proximate said write gap layer is approximately 60% wt.%; and wherein the Fe concentration within said portion of said P2 magnetic pole having said graduated composition varies from approximately 60 wt.% to approximately 20 wt.%; and wherein the Fe concentration of said P2 magnetic pole proximate said write gap layer is approximately 60 wt.%.

13. A hard disk drive including a magnetic head that includes a write head, comprising:

a first (P1) magnetic pole being composed of a NiFe composition, wherein the ratio of Ni to Fe is graduated throughout portions of said P1 magnetic pole;

a second (P2) magnetic pole being composed of a NiFe composition, and wherein the ratio of Ni to Fe is graduated throughout portions of said P2 magnetic pole;

a write gap layer being disposed between said P1 magnetic pole and said P2 magnetic pole.

14. A hard disk drive as described in claim 13 wherein said portion of said P1 pole having said graduated composition is disposed proximate said write gap layer, and said portion of said P2 magnetic pole having said graduated composition is disposed proximate said write gap layer.

15. A hard disk drive as described in claim 14, wherein the Fe concentration within said portion of said P1 magnetic pole having said graduated composition varies from approximately 20 wt.% to approximately 60 wt.%, and wherein the Fe concentration of said P1 magnetic pole proximate said write gap layer is approximately 60 wt.%; and wherein the Fe concentration within said portion of said P2 magnetic pole having said graduated composition varies from approximately 60 wt.% to approximately 20 wt.%; and wherein the Fe concentration of said P2 magnetic pole proximate said write gap layer is approximately 60 wt.%.

16. A method for fabricating a write head portion of a magnetic head, comprising the steps of:

fabricating a P1 magnetic pole by electroplating NiFe material, wherein the duty cycle of an electroplating current is varied during the electroplating process to form a P1 magnetic pole having a graduated NiFe composition;

fabricating a write gap layer upon said P1 magnetic pole;

fabricating a P2 magnetic pole upon said write gap layer by electroplating NiFe material, and wherein the duty cycle of the electroplating current that is utilized in said electroplating process is varied to form a P2 magnetic pole having a graduated NiFe concentration.

17. A method for fabricating a magnetic pole as described in claim 16 wherein said duty cycle of said electroplating current of said P1 magnetic pole is greatest proximate said write gap layer, and said duty cycle of said electroplating current of said P2 magnetic pole is greatest proximate said write gap layer.

18. A method for fabricating a magnetic head as described in claim 17 wherein the current density of said electroplating current is from 4 mA/cm^2 to 16 mA/cm^2 for both said P1 magnetic pole and said P2 magnetic pole.

19. A method for fabricating a magnetic head as described in claim 18 wherein an electroplating bath for fabricating said P1 pole and said P2 pole has Ni and Fe concentration ranges of from 5:1 Ni:Fe to 20:1 Ni:Fe.

What we claim is: